natural resources journal

Published four times per year by the University of New Mexico School of Law

Vol. 29 Summer 1989 No. 3

The isolation of scholars in various fields concerned with resources problems continues to be a principal impediment to progress. . . . Resources problems are so complex that traditional lines of approach prove inadequate. . . . Rarely do we find the work of the lawyer and the non-lawyer appearing side by side. . . . The primary function of this [new] Journal is to meet this need. . . .

from the Foreword of Volume 1, No. 1, 1961

CONTENTS

Arthur H. Chan	629	To Market or Not to Market: Allocating Water Rights in New Mexico
Andrew K. Dragun and Victor Gleeson	645	From Water Law to Transferability in New South Wales
Robert D. Hayton and Albert E. Utton	663	Transboundary Groundwaters: The Bellagio Draft Treaty
Richard A. Kluender and John C. Pickett	723	Public Policy Implications for the Supply of Pine Sawlogs
John V. Krutilla and Michael D. Bowes	737	Economics and Public Forestland Management
Peter J. Longo and Robert D. Miewald	751	Institutions in Water Policy: The Case of Nebraska
Michael R. Moore	763	Native American Water Rights: Efficiency and Fairness
Peter M. Morrisette	793	The Evolution of Policy Responses to Stratospheric Ozone Depletion

YPREC TL4712
E.T.

Ernst Willheim 821 Australia-Indonesia Sea-Bed Boundary Negotiations: Proposals for a Joint Development Zone in the "Timor Gap"

James M. Jackson 843 A Comment on the Wilderness Debate: A Rancher's View

STUDENT WRITINGS

Note (*Yvette Gonzales*) 849 The Best Equitable Defense Is a Good Offense

Note (*Shannon A. Parden*) 861 The Milagro Beanfield War Revisited in *Ensenada Land and Water Association v. Sleeper:* Public Welfare Defies Transfer of Water Rights

Comment (*M. Gloria Tristani*) 877 Interior Turns off Tap for Wilderness Areas

BOOK REVIEWS

Leonard B. Dworsky 895 Perspectives on Ecosystem Management for the Great Lakes: A Reader

Aynsley Kellow 898 Resource Development and Environmental Issues: Opportunities and Constraints in the Hunter Region, NSW

Raymond Prince 900 Using Surveys to Value Public Goods: The Contingent Valuation Method

develop effective substitutes, they also viewed the protocol as a necessary measure to spur development of these substitutes.

Decisionmakers are confronted with great difficulty when making decisions about cumulative low-grade, long-term environmental problems where impacts are often delayed by decades or even centuries.[127] They often choose to ignore them rather than deal with them. The existence of the Montreal Protocol then is encouraging because decisionmakers decided to take significant action—reducing the emissions of important chemicals—more on the basis of the theory that CFCs destroyed ozone than on conclusive evidence that ozone was actually being depleted by CFCs. However, the scientific evidence behind the theory was substantial and there was strong preliminary evidence pointing to ozone depletion by CFCs. Decisionmakers, based on an assessment of the problem, found the risks unacceptable. Yet the actual decisionmaking process was not quite this simple. There were other important motivating factors. For example, industry needed regulation to spur its development of alternatives and the public responded to the problem with great concern. However, perhaps most important, over 15 years the issue of ozone depletion had evolved as a political issue, and had been transformed from a national environmental and political issue to an international one. In a sense then, in September 1987 the time was right to act, as the scientific evidence was more conclusive than ever and the social, economic, and political climate had evolved sufficiently.

While the Montreal Protocol is not a perfect document, it is nevertheless a landmark agreement. It is the first international agreement aimed at resolving a global atmospheric problem. It is important not only because it outlines measures agreed on by the international community to protect the ozone layer, but also because it signifies that innovative approaches to major global environmental problems are possible. Yet the world should not be lulled into a false sense of security by the protocol: the protocol may not solve the ozone depletion problem, at least in the near term. In addition, while there are certainly similarities between ozone depletion and other global environmental problems such as global warming, the means for dealing with these other problems may not be the same as for ozone depletion. The Montreal Protocol, however, offers the precedent for international negotiation and agreement on global environmental problems.

127. *See* Glantz, *A Political View of CO_2*, 280 Nature 189 (1979); Glantz, *Politics and the Air and Us*, in Societal Responses to Regional Climatic Change: Forecasting by Analogy 41 (M. Glantz ed. 1988).

ERNST WILLHEIM*

Australia-Indonesia Sea-Bed Boundary Negotiations: Proposals for a Joint Development Zone in the "Timor Gap"

ABSTRACT

The 1982 United Nations Conference on the Law of the Sea provides little guidance on continental shelf delimitation. The Convention confirms that the continental shelf extends to the outer edge of the continental margin but also confers continental shelf rights out to 200 nautical miles independently of the existence of a continental margin. This dual basis for continental shelf jurisdiction, (the combination of the original concept based on geomorphology with the new jurisdiction based on distance alone) gives rise to difficulty where opposing states are separated by two shelves and the maximum claim of one state is based on geomorphology and that of the other state is based on distance.

Faced with such an impasse, Australia and Indonesia are seeking to develop a joint development zone. This article explores some of the issues that need to be addressed in such a zone—issues that are particularly challenging between states having vastly different social and political systems.

INTRODUCTION

Australia and Indonesia have for some years been seeking to negotiate a sea-bed boundary between East Timor and Northwest Australia. Notwithstanding the existence of agreed sea-bed boundary lines immediately east and west of the so-called Timor-Gap, agreement on a boundary in the area of the Gap itself has so far proved elusive.

In the absence of agreement on a permanent boundary delimitation, one of the options now being examined by the parties, having regard to

*First Assistant Secretary, Justice Division, Attorney-General's Department, Canberra, Australia.

The writer gratefully acknowledges the assistance of Ms. Kathy Leigh, Senior Legal Officer in the Attorney-General's Department, in the the preparation of this paper. Responsibility for all views expressed in the paper rests solely with the writer.

This article is the edited text of a paper presented at a seminar, "Australia and the Law of the Sea" conducted by the Australian Branch of the International Law Association. This paper was presented in a personal capacity and does not purport to reflect the views of the Attorney-General's Department or the Australian Government.

the existence in the disputed area of structures thought to be prospective for hydrocarbons, is a joint development zone (JDZ). Such a zone, if agreed upon, would enable shared exploration and exploitation of sea-bed resources to proceed pending agreement on permanent delimitation.

The first part of this paper will outline the background to the boundary negotiations. The second part will look at issues that need to be addressed in the establishment of a JDZ.

THE "TIMOR GAP"

The distance between the northwest coast of Australia and East Timor is less than 400 nautical miles (nm). Australia's continental shelf is a broad one, extending to the Timor Trough, a major geomorphological feature separating the continental shelves of the Australian and Asian continental land masses. The trough is some 3000 meters deep and 30-60nm from the coast of Timor. It is therefore much closer to Indonesia than to Australia. Figure 1 is a map of the area.

Early sea-bed boundary delimitation was based primarily on the concept of the continental shelf as a natural prolongation of the land mass. The two existing sea-bed boundary agreements between Australia and Indonesia reflect this approach. The first, in May 1971,[1] fixed sea-bed boundaries in the Arafura Sea from west of Cape York to north of Arnhem Land (approximately 520nm in length). The second, in October 1972,[2] extended this sea-bed boundary westward in two segments to an area south of West Timor in the Timor Sea (approximately 540nm), but with a gap approximately 130nm in length opposite East Timor. In the area of the Timor Trough, the boundary generally follows the line of the Trough, although it is a little on the Australian side (see Figure 1).

East Timor was at that time under the control of Portugal, and Australia was unable to successfully negotiate a boundary agreement. Hence, a gap was left in the sea-bed boundary, the so-called "Timor Gap" with which this paper is concerned. Other parts of the sea-bed boundary between the two countries also left undetermined are the boundary further west of the 1972 line and the boundary between Christmas Island and Java.

The 1971 and 1972 agreements made no provision in relation to the watercolumn. In October 1981, the two countries signed a memorandum

1. Agreement Between the Government of the Commonwealth of Australia and the Government of the Republic of Indonesia Establishing Certain Seabed Boundaries, May 18, 1971, Australia-Indonesia, 1973 Austl. T.S. No. 31.

2. Agreement Between the Government of the Commonwealth of Australia and the Government of the Republic of Indonesia Establishing Certain Seabed Boundaries in the Area of the Timor and Arafura Seas, Supplementary to the Agreement of May 18, 1971, Oct. 9, 1972, Australia-Indonesia, 1973 Austl. T.S. No. 32.

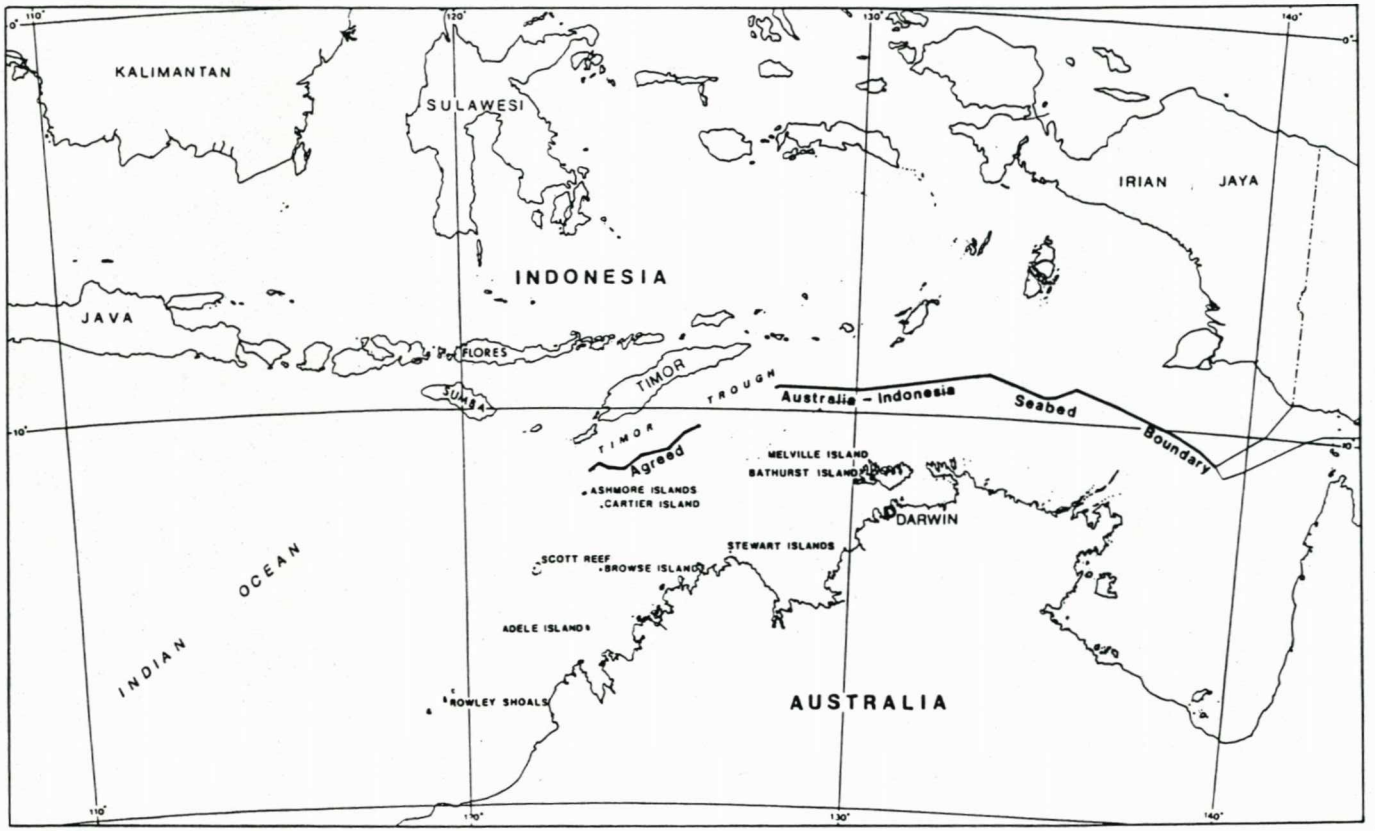
KALIMANTAN
SULAWESI
IRIAN JAYA
INDONESIA
JAVA
FLORES
SUMBA
TIMOR
TROUGH
Australia - Indonesia Seabed Boundary
TIMOR Agreed
MELVILLE ISLAND
BATHURST ISLAND
ASHMORE ISLANDS
CARTIER ISLAND
DARWIN
STEWART ISLANDS
SCOTT REEF
BROWSE ISLAND
ADELE ISLANDS
ROWLEY SHOALS
INDIAN OCEAN
AUSTRALIA
110°
120°
130°
140°
10°
100 50 0 100 200 300 400 Nautical Miles

FIGURE 1.

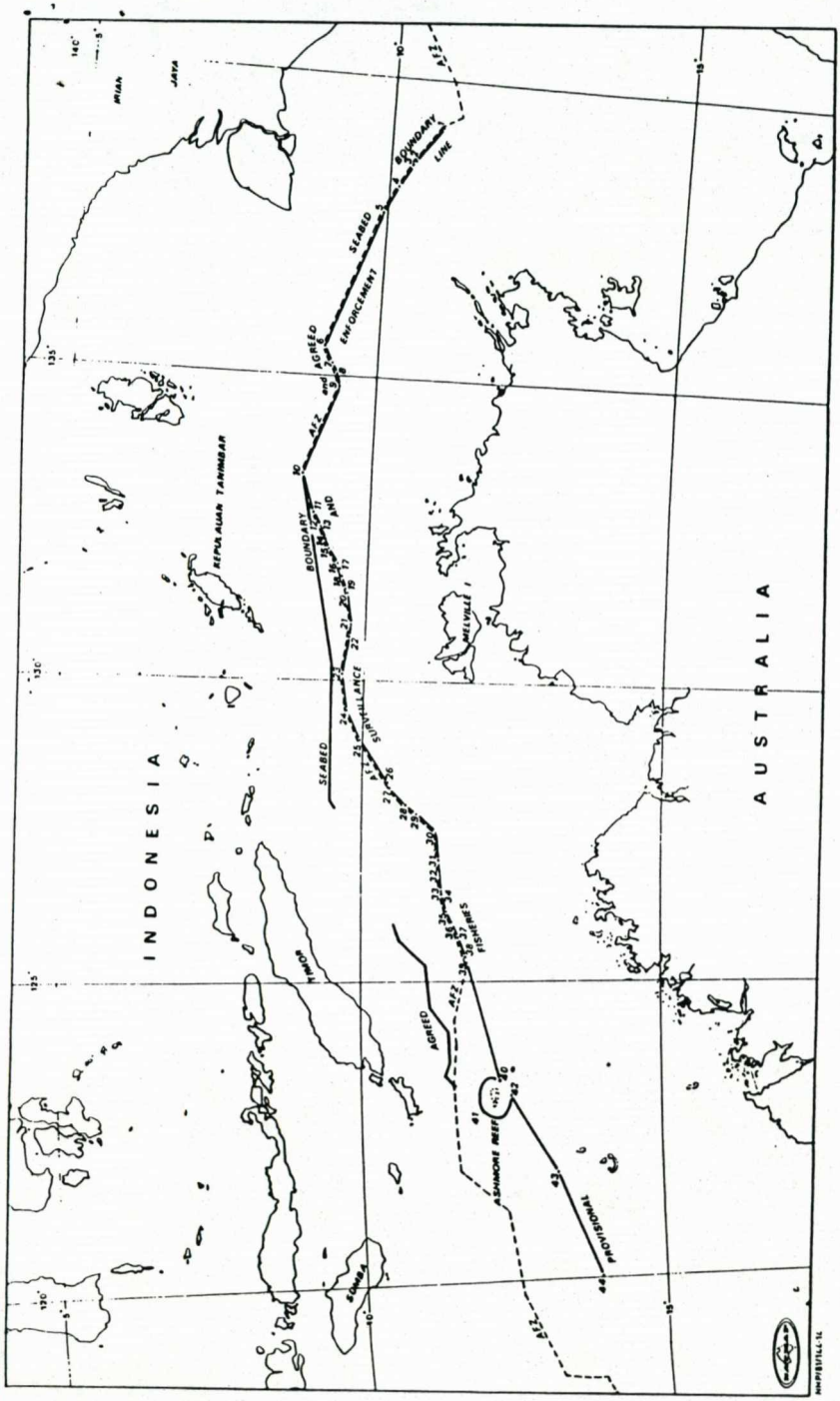

FIGURE 2. Sketch Map.

FIGURE 2. (Continued)

Point	Latitude S	Longitude E
1.	10° 50′	139° 12′
2.	10° 24′	138° 38′
3.	10° 22′	138° 35′
4.	10° 09′	138° 13′
5.	9° 57′	137° 45′
6.	9° 08′	135° 29′
7.	9° 17′	135° 13′
8.	9° 22′	135° 03′
9.	9° 25′	134° 50′
10.	8° 53′	133° 23′
11.	9° 06′	132° 46′
12.	9° 14′	132′ 33′
13.	9° 16′	132° 30′
14.	9° 20′	132° 20′
15.	9° 23′	132° 12′
16.	9° 31′	131° 57′
17.	9° 33′	131° 52′
18.	9° 36′	131° 43′
19.	9° 40′	131° 31′
20.	9° 42′	131° 28′
21.	9° 47′	130° 55′
22.	9° 45′	130° 43′
23.	9° 39′	130° 06′
24.	9° 45′	129° 30′
25.	9° 59′	129° 01′
26.	10° 26′	128° 18′
27.	10° 28′	128° 14′
28.	10° 45′	127° 58′
29.	10° 55′	127° 47′
30.	11° 15′	127° 31′
31.	11° 18′	127° 01′
32.	11° 19′	126° 48′
33.	11° 20′	126° 31′
34.	11° 21′	126° 28′
35.	11° 26′	126° 12′
36.	11° 31′	126° 00′
37.	11° 37′	125° 45′
38.	11° 45′	125° 25′
39.	11° 47′	125° 20′
40.	12° 19′	123° 21′
41.	Between point 40 and point 42 the line passes to the north of Ashmore Island along a line each point on which is twelve miles distant from the nearest base point of the territorial sea of Ashmore Island.	
42.	12° 30′	123° 06′
43.	13° 15′	121° 49′
44.	13° 56′	120° 01′

of understanding adopting a provisional fisheries surveillance and enforcement line.[3] That line is based largely on equidistance and accordingly is, in parts, south of the sea-bed boundary (see Figure 2).

Australia sought to open negotiations with Portugal regarding the Timor Gap following the 1971 and 1972 agreements with Indonesia. However, no progress had been made when the old Portuguese regime disintegrated in 1975. East Timor was subsequently incorporated into Indonesia, but it was some time before Australia recognized Indonesian sovereignty over the area. In the meantime, negotiations on the other outstanding boundary issues were also suspended.

Discussions resumed in 1979 and have concentrated on the Timor Gap.[4] Notwithstanding nine rounds of official talks and some informal contact,

3. Memorandum of Understanding between the Government of the Republic of Indonesia and the Government of Australia concerning the Implementation of a Provisional Fisheries Surveillance and Enforcement Arrangement, signed at Jakarta, October 29, 1981 (available from Department of Foreign Affairs and Trade, Canberra).

4. See Addendum, *infra*, for discussion of a recent in principle agreement relating to the establishment of a Zone of Co-operation for petroleum exploration and exploitation.

no agreement on a permanent delimitation is in sight. As the problem centers on the legal principles that should govern delimitation, it is to a brief consideration of those principles that I now turn.

THE CONTINENTAL SHELF CONCEPT

The concept of national jurisdiction over a continental shelf beyond the territorial sea is relatively modern in origin, usually being traced to the 1945 Truman Proclamation.[5] Australia played an early part in its development, asserting sovereign rights over the sea-bed and subsoil of its continental shelf by proclamation in 1953.[6] The 1958 Geneva Convention on the Continental Shelf defined the continental shelf as referring to "the sea-bed and subsoil of the submarine areas adjacent to the coast but outside the area of the territorial sea, to a depth of 200 meters or, beyond that limit, to where the depth of the superjacent waters admits of the exploitation of the natural resources of the said areas"[7] with similar provision for islands. Later in the *North Sea Continental Shelf Cases*,[8] the International Court of Justice recognized the continental shelf of the coastal state as a "natural prolongation of its land territory" existing "*ipso facto* and *ab initio*, by virtue of its sovereignty over the land, and as an extension of it an exercise of sovereign rights for the purpose of exploring the sea-bed and exploiting its natural resources. In short, there is here an inherent right."[9] As already noted, the 1971 and 1972 agreed sea-bed delimitation lines reflect these concepts in that, in the area of the Timor Trough, that feature was the basis for delimitation.

THE 1982 UNITED NATION CONVENTION ON THE LAW OF THE SEA

The 1982 United Nations Convention on the Law of the Sea[10] significantly enlarges the scope for coastal state jurisdiction over the sea and sea-bed. The Convention enables a coastal state to establish an Exclusive Economic Zone (EEZ) beyond its territorial sea, extending 200nm from its territorial sea baselines, in which it has sovereign rights for the purposes of exploring and exploiting the natural resources of the water column and the sea-bed and jurisdiction for purposes such as protection of the marine environment.[11]

5. 10 Fed. Reg. § 12,303 (1945).

6. Commonwealth Gazette No. 56 (1953); *see also* Pearl Fisheries Act (No. 2), 1953.

7. Art. 1.

8. North Sea Continental Shelf (W. Ger. v Den.; W. Ger. v Neth.), 1969 I.C.J. Reports 3 (Judgment of Feb. 20).

9. *Id.* at 22 para. 19.

10. Official Records of the Third United Nation Conference on the Law of the Sea, U.N. Doc. A/CONF.62/122 (Oct. 7, 1982) [hereinafter Official Records].

11. *Id.* at 22-23, pt. V, arts. 55-57.

The convention also adopted a new approach to continental shelf jurisdiction.[12] The definition of the continental shelf[13] is now in two parts. In the case of a broad shelf country like Australia, the relevant part of the definition makes it clear that the continental shelf extends beyond the territorial sea "throughout the prolongation of its land territory to the outer edge of the continental margin."[14] This in effect, confirms the principle underlying the *North Sea Continental Shelf Cases*[15] decision. From Australia's viewpoint, this provision would appear to confirm the legal basis for the Australian claim to sovereign rights out to the Timor Trough.

In addition, the convention confers, for the first time, continental shelf rights independently of the existence of a continental margin. Narrow shelf countries now have continental shelf rights "to a distance of 200nm from the base lines from which the territorial sea is measured,"[16] notwithstanding that the continental shelf does not extend up to that distance. From Indonesia's viewpoint, therefore, the convention gives it a legal basis for a claim to sea-bed rights extending 200nm from its territorial sea baselines, notwithstanding that the natural prolongation of its land mass does not extend beyond the Timor Trough.

CONTINENTAL SHELF DELIMITATION

It is this dual basis for continental shelf jurisdiction—the combination of the original concept based on geomorphology, with the new EEZ which recognizes continental shelf jurisdiction based on distance alone, that now gives rise to difficulty in continental shelf delimitation. The difficulty is acute where, as in the case of Australia and Indonesia, the opposing states are separated by two shelves and the maximum claim of one state is based on geomorphology and that of the other state is based on distance.

Notwithstanding the complication introduced by the new dual bases for continental shelf jurisdiction, the provisions on delimitation in the 1982 Convention are rudimentary. Article 83 provides that delimitation of the continental shelf between states with opposite or adjacent coasts shall be affected by agreement on the basis of international law, as referred to in Article 38 of the Statute of the International Court of Justice, in order to achieve an equitable solution.[17] The question for consideration is, of course, what are the relevant principles of international law and equity.

The expanded continental shelf definition in the 1982 convention has

12. *Id.* at 33-37, pt. VI.
13. *Id.* at 33, art. 76.
14. *Id.*
15. See *supra* notes 8-9 and accompanying text.
16. Official Records, *supra* note 10, at 33, art. 76.
17. *See also id.* at 32, art. 74 (in relation to EEZ delimitation).

undoubtedly introduced a new element into delimitation. Since distance is now a basis for the exercise of continental shelf jurisdiction, independently of geomorphology, distance may also be relevant in relation to delimitation. Indeed, some go as far as to maintain that, since the convention gives each coastal state a notional continental shelf out to 200nm so that the coastal state now exercises sea-bed rights out to this distance regardless of depth, distance has, in effect, superseded geomorphology. The result is that where, as in the Timor Sea, the distance between the opposing coasts is less than 400nm, equidistance, or the median line, is the prevailing principle. That, indeed, is the Indonesian position.

The argument in favor of equidistance appears persuasive where both states claim jurisdiction solely on the basis of distance. It is less so where, as in the Timor Gap, one state claims jurisdiction on the basis of the first part of the continental shelf definition, that is, geomorphology. In those circumstances, it seems inconceivable that distance should be the sole criterion for seabed delimitation (although it may now be the stating point for EEZ delimitation).

Australia has seen the first part of the new definition of the continental shelf as, in effect, confirming the *North Sea Continental Shelf Cases* principles[18] that the shelf is the natural prolongation of the land territory, in respect of which there is an inherent right. Under the 1982 convention, the structure of the shelf remains a primary basis for continental shelf jurisdiction and the rights of broad shelf states are accordingly preserved. It may be noted, in this respect, that the new convention, and in particular the new 200nm rights, are not expressed to deprive broad shelf states, such as Australia, of inherent rights they previously exercised.

Australia and Indonesia have, therefore, approached the boundary delimitation negotiations from different theoretical bases. Neither state has been prepared to compromise on matters of basic legal principles. Figure 3 shows the scope of the problem, including the position of the Indonesian 200nm EEZ claim and the location of the median line. It will be apparent that the median line is substantially south of the existing agreed sea-bed boundary.

Decisions since the 1982 Law of the Sea Convention do not provide much guidance for resolution of the problem. The *Tunisia-Libya Continental Shelf Case*[19] endorses the natural prolongation principle and the conceptual distinction between the continental shelf and the EEZ. *The Gulf of Main Case*[20] was the first in which the parties sought a single delimitation for both the continental shelf and the water column.[21] The

18. See *supra* notes 8-9 and accompanying text.
19. (Tunisia v. Libya) 1982 I.C.J. Reports 18 (Judgment of Feb. 24).
20. (Canada v. U.S.) 1984 I.C.J. Reports 286 (Judgment of Oct. 12).
21. *Id.* at 314.

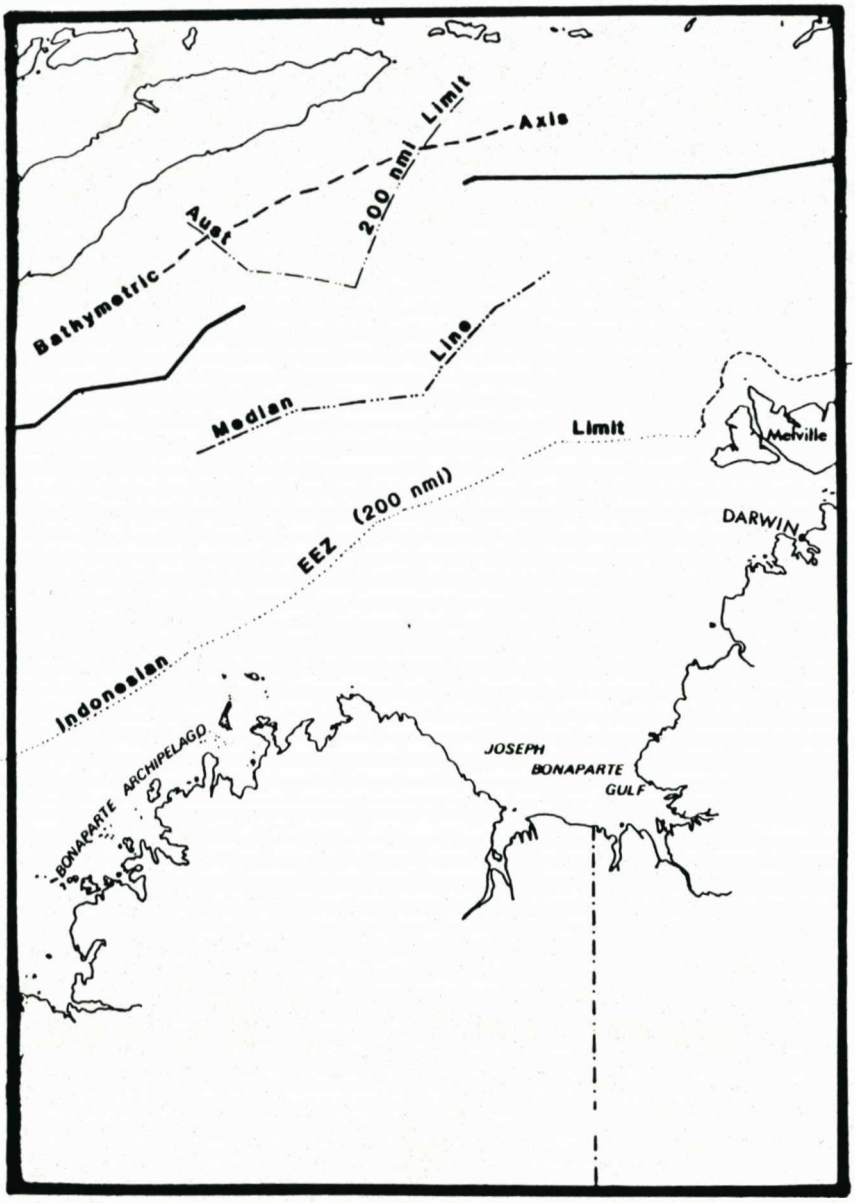
200 nmi Limit
Axis
Aust
Bathymetric
Line
Median
Limit
Melville
EEZ (200 nmi)
DARWIN
Indonesian
JOSEPH
BONAPARTE
GULF
BONAPARTE ARCHIPELAGO

FIGURE 3.

Chamber[22] drew attention to the difficulties that arise where different methods are relevant to the delimitation of the continental shelf and the water column.[23] It specifically found that the relevant shelf was a single structure[24] and distinguished the Gulf of Maine situation from the situation "that may prevail in areas where a natural separation does exist from the factual viewpoint between the respective continental platforms of the Parties in dispute."[25]

Some support for the Indonesian position may be derived from the *Libya-Malta Continental Shelf Case*[26] which linked the continental shelf with the new EEZ concept and gave greater weight to distance criteria in delimitation disputes where the distance between the two opposing coasts is less than 400nm. That decision is, however, difficult to reconcile with the earlier *Guinea-Guinea Bissau*[27] arbitration in which the Tribunal (all 3 members of which were members of the International Court of Justice) considered that in sea-bed delimitation the equidistance method was just one among many and there was no obligation to use it or give it priority.[28] The Tribunal cited with approval the *North Sea Continental Shelf Cases*,[29] and made it clear that it could not ignore the structure of the continental shelf.[30] The rule of natural prolongation could be effectively invoked for purposes of delimitation where there were two opposing shelves.[31]

Collectively, the decisions provide great guidance where considerations of geomorphology or the wishes of the parties point to a single maritime boundary. They are less relevant where, as in the Timor Gap, the parties seek, and geomorphology requires, continental shelf delimitation separate from EEZ delimitation. Ultimately it may be that, as in the *Guinea-Guinea Bissau*[32] arbitration, a third party tribunal would not find any single factor (the size and structure of the two shelves, equidistance, etc.) decisive, but would seek to reach an "equitable" solution on the basis of both factors and perhaps some others, such as the sizes of the land masses of the two countries, length, direction and configuration of the coastlines, historical considerations including the 1971 and 1972 Australia-Indonesia agreements,[33] and so on. It is difficult to predict where

22. Article 26 of the Statute of the International Court of Justice makes provision for the Court to form a chamber to deal with a particular case.
23. *Id.* at 314, 327.
24. *Id.* at 274.
25. *Id.* at 275.
26. (Libya v. Malta) 1985 I.C.J. Reports 13 (Judgment of June 3).
27. 25 I.L.M. 251 (1986).
28. *Id.* at 294.
29. See *supra* notes 8-9 and accompanying text.
30. 25 I.L.M. at 299.
31. *Id.*
32. See *supra* notes 27-28 and accompanying text.
33. See *supra* notes 1-2 and accompanying text.

a Tribunal would draw the line, except to say that it would almost certainly be north of the median and south of the bathymetric axis.[34] At this stage, neither side has shown any disposition to have the matter resolved other than by bilateral negotiations.

POSSIBLE JDZ

In the face of this impasse, the two parties to the negotiations have been looking for some time now at the possibility of a JDZ. The reason is not, as some have suggested, that there is an international legal obligation to go down that track. Certainly, Article 83(3) of the Law of the Sea Convention does provide that "pending agreement . . . the states concerned . . . shall make every effort to enter into provisional arrangement of a practical nature." Unilateral development of the area in dispute is neither legally acceptable under Article 83(3), nor is it commercially practical. Joint development is one kind of provisional arrangement but not necessarily the only kind.[35] The impetus for joint development is that, in the absence of agreement on permanent delimitation, the concept of joint development may provide some prospect of exploiting, on a shared basis, resources, the rights to which cannot otherwise be agreed. It may be noted, in this respect, that the area in question contains structures thought to be prospective for hydrocarbons.

AREA OF A JDZ

Of course, the joint development option is not itself an easy one to implement. Agreement first must be reached as to the area of joint development. In a situation where the relevant criteria for delimitation have not been agreed, each side will be concerned to ensure that any interim arrangement does not prejudice its long term interests in the most favorable permanent delimitation. The two sides are now engaged in a search for an interim solution that neither side sees as inimical to its long term interests. From Australia's perspective, the area under consideration is south of the bathymetric axis of the Timor Trough. It is, therefore, on the Australian side of the geomorphological feature Australia would see as the starting point for permanent delimitation. On the other hand, it is north of the median line, which is the line that Indonesia, for its part, sees as the basis for the permanent boundary. For each side, therefore, joint development involves sharing with the other side those resources to which it believes it has a good claim. Agreement on joint development therefore requires compromise and goodwill on both sides.

34. I.e., the line joining the deepest points in the trough.

35. Another possibility would be development by one side alone subject to agreed payments to the other side.

MANAGEMENT OF JDZ

The most formidable task in establishing a JDZ regime, however, is not determination of the boundaries of the JDZ but devising a means of merging or otherwise applying the legal and administrative systems of the two countries. It is fundamental to a JDZ that neither state has abandoned its claim to sovereign rights in respect of the area of the JDZ, but each accepts that the other maintains inconsistent claims. The competing claimants temporarily put aside their claims to exclusive jurisdiction to enable development of a resource on a shared basis. How is the exercise of sovereign rights of two states in the one area to be accommodated?

From the point of view of industry, it is essential to operators that they obtain good title before commencing exploration and exploitation. In the case of a JDZ, title cannot be based on the exclusive jurisdiction of one coastal state. Rather, the operator derives title from the two states jointly. Accordingly, the legal and administrative system of neither state is inherently paramount. The joint development arrangements, therefore, need to make provision for the exercise of all the attributes of sovereign rights, including the application of regime of law and administration to the area of joint development.

Application of a legal and administrative framework to a JDZ becomes especially complex where, as in the case of Australia and Indonesia, the legal and social systems of the two states concerned are so very different. A wide range of matters need to be considered. To name a few:

- the granting of exploration and production rights;
- administration, including arrangements with and supervision of, operators and all the other things normally part of a domestic mining code;
- collection and sharing of revenue;
- application of public regulatory laws covering matters such as immigration, customs and quarantine;
- application of a system of private law, including general civil and criminal laws.

It will be apparent that a JDZ may be a complex arrangement both legally and administratively. A matter for consideration is whether the legal and administrative problems are surmountable and how the complexity can be minimized.

EXISTING MODELS FOR JOINT DEVELOPMENT

Joint development is not new. In the author's part of the world, joint development agreements are already in place between Thailand and Ma-

laysia in relation to the Gulf of Thailand,[36] and the Republic of Korea and Japan in relation to part of the East China Sea.[37] Agreements have been made in other parts of the world between Saudi Arabia and Kuwait[38] and Iceland and Norway.[39]

The literature relating to these agreements is already extensive and this paper will not describe them in detail. Rather, drawing as necessary on what has been done elsewhere, this paper will discuss some of the key issues that will need to be resolved in any arrangement for joint development between Australia and Indonesia in the Timor Gap.

Several approaches to joint development are possible. At the outset, decisions have to be made as to the extent to which detailed arrangements are agreed in advance, or left for later resolution by whatever body is charged with the administration of joint development. Joint development arrangements usually involve the establishment of a joint authority. Delegation to a joint authority of major decision making powers will facilitate early agreement at the diplomatic level. On the other hand, it may leave the joint authority with problems it is not equipped to resolve. That appears to have become the fate of the Thailand/Malaysia joint authority, which after eight years, has not been able to resolve such basic issues as what civil laws are to apply.

The two regional examples of joint development provide interesting examples of different approaches. The Japan/Korea scheme is embodied in a lengthy agreement of 31 articles.[40] Detailed provision is made for division of the JDZ into subzones,[41] and for each Party to authorize concessionaires.[42] The concessionaires are to agree on a single operator.[43] In the absence of agreement, the operator is determined by lot.[44] The operator has exclusive control of operations, and employs all personnel.[45]

36. Memorandum of Understanding Between the Kingdom of Thailand and Malaysia on the Establishment of the Resources of the Sea-bed in a Defined Area of the Continental Shelf of the Two Countries in the Gulf of Thailand, Feb. 21, 1979 [hereinafter Thailand/Malaysia MOU].

37. Agreement Between Japan and the Republic of Korea Concerning Joint Development of the Southern Part of the Continental Shelf Adjacent to the Two Countries, Feb. 5, 1974 (reproduced in 4 New Directions in the Law of the Sea 117 (Churchill et al., eds. 1975)) [hereinafter Japan/Korea Agreement].

38. Agreement Between the State of Kuwait and the Kingdom of Saudi Arabia Relating to the Partition of the Neutral Zone, July 7, 1965, Kuwait-Saudi Arabia, 4 I.L.M. 1134.

39. Agreement on the Continental Shelf Between Iceland and Jan Mayen, Oct. 22, 1981. The issue is, of course, quite different from that of a single deposit overlapping agreed boundaries, a situation in relation to which the legal principles appear to be more developed.

40. Japan/Korea Agreement, *supra* note 37.

41. *Id.* at art. III.

42. *Id.* at art. IV.

43. *Id.* at art. VI.

44. *Id.*

45. *Id.*

Rules are established for commencement of operations,[46] and release of areas.[47] The laws of each Party apply to its own concessionaires.[48] Provision is also made for such matters as compensation for damage,[49] and assignment of radio frequencies.[50] So far as revenues are concerned, each state's concessionaire receives half the resources and each state is then free to to apply its own royalty, taxation, and production-sharing arrangements to its own concessionaire.[51] A Joint Commission oversees the operation of the agreement.[52]

The Malaysia/Thailand scheme is quite different. This is a short, framework, agreement of only eight articles.[53] Rather than segmenting the area of joint development into blocks which are administered according to the law of one of the parties, it seeks to unify administration under a single, harmonized, law.[54] A strong joint authority is established which assumes all rights, responsibilities and powers on behalf of both parties for the development, control and administration of the area.[55] Development of the appropriate arrangements is therefore left to the joint authority.

Neither of these two approaches has been entirely successful. The Japan/Korea arrangement has apparently encountered difficulties because of its complexity.[56] The Malaysia/Thailand joint authority, although established ten years ago, is still seeking solutions to such basic issues as what industrial laws are to apply.[57] The two arrangements, nevertheless, illustrate different ways of approaching the concept of joint development. The whole area of joint development may be administered jointly or it may be divided into parts with each state administering separate parts.

PREFERABLE APPROACHES FOR A JDZ IN THE TIMOR GAP: THE ROLE OF A JOINT AUTHORITY

It seems unlikely that either of these two models would be wholly suitable for adoption by Australia and Indonesia. In particular, harmonization of laws seem impractical, and division of administration, on the basis of blocks or a line, is unlikely to be acceptable. The preferable approach would appear to be to establish a joint authority to administer the whole of the JDZ, but first to seek agreement at the government-to-

46. *Id.* at art. XII.
47. *Id.* at art. XIII.
48. *Id.* at art. XIX.
49. *Id.* at art. XXI.
50. *Id.* at art. XXII.
51. *Id.* at arts. IX & XVII.
52. *Id.* at arts. XXIV & XXV.
53. Thailand/Malaysia MOU, *supra* note 36.
54. *Id.* at art. III.
55. *Id.*
56. This view has been conveyed to the author by senior oil company executives.
57. Informed sources have explained to the author that it is the lack of agreement on these legal issues that is holding up implementation.

government level on key aspects of the legal and administrative regime that is to apply. This approach may delay establishment of a joint authority but seems preferable to deferral, for consideration by officials, of matters that are properly ones for resolution by governments.

As the author sees it, therefore, the joint authority would not determine fundamental questions such as what law is to apply or how revenue is to be raised. Fundamental, threshold, issues need to be agreed upon in the treaty arrangements establishing the JDZ. That treaty would establish the joint authority as a primarily administrative body comprised of officials of the two governments to grant and administer titles. The joint authority would undertake, on behalf of the two governments, the administrative and supervisory functions normally undertaken in a domestic mining administration. These would include the division of the JDZ area into blocks or titles, the selection of operators, contractual arrangements with operators, the supervision of operators, and general oversight of the operation of the joint scheme. In substance, the joint authority would oversee and administer the mining code.

MINING CODE

The mining code will, itself, be of central importance. On the assumption that the joint authority will administer the whole area of joint development, a single code should apply. Undoubtedly, there would be advantage in adapting the existing mining code of one of the two countries. There is no particular reason for choosing one or the other, but if, as suggested below, Australian civil and criminal law is to to be applied, a reasonable *quid pro quo* may be the application of the Indonesian mining code. The kinds of matters dealt with in Australia under the *Petroleum (Submerged Lands) Act* 1967,[58] including directions under that legislation, would probably be incorporated within the contractual arrangements between the joint authority and individual operators. They would, therefore, be enforceable on a contractual basis rather than by force of the substantive domestic law of one or other of the two countries.

LICENSING AND ADMINISTRATION

The "mines administration" function of a joint authority would be a substantial one. It would cover such matters as division of the area of joint development into blocks, inviting applications and selecting operators, approval of transfers and farm-out arrangements, and imposition and enforcement of exploration and production requirements. Operational matters within its responsibility would include supervision of exploration

58. Austl. Acts No. 118, as amended.

and production activities and safety and environmental standards. It would also be responsible for revenue collection.

Matters requiring special attention include the principles to be applied in relation to licensing, in particular, whether licenses and contracts are to be awarded on a commercially competitive basis or whether special preference is to be given to nationals of the two states concerned.

If joint development is to be efficient and attractive to operators, the joint authority will need to be able to function as an effective operational administrator, able to make its own decisions. While it will no doubt be "watched" by the two national administrations, it will be important to avoid unnecessary duplication of bureaucratic structures. In particular, it should not be necessary for operational decisions to be referred to capitals for approval. A balance will therefore need to be struck between the desires of the two national administrations to be kept involved and the need for effective decision making.

REVENUE

From the perspective of the two Governments, a satisfactory arrangement for the collection of revenue is, of course, a key requirement. Revenue in a JDZ is likely to be shared equally between the two Governments. A range of approaches to revenue collection is possible. If the Japan/Korea model were adopted and individual operators were identified with one or other of the JDZ states, there would appear to be scope to allocate half the actual resource to each operator, leaving each state free to impose its own revenue collection system on its own operator. Under that system, the revenue collected by each state could be different. If, as seems more likely, a system rather different from the Japan/Korea model is adopted, revenue will probably need to be collected centrally.

Australia and Indonesia have quite different revenue arrangements in relation to the hydrocarbon industry. Australia has a concession system. The licensee, or operator, in effect obtains the rights of the state to explore[59] and recover[60] the resource. In return, the operator must pay exploration permit fees,[61] royalties,[62] and excise.[63] These are being replaced by a resource rent tax.[64] Income taxes are also imposed.

Indonesia operates under a production sharing system under which costs of production are reimbursed and production is shared between the

59. *Id.* at Part III, Divisions 2 & 2A.
60. *Id.* at Division 3.
61. Petroleum (Submerged Lands) (Exploration Permit Fees) Act, 1967, Austl. Acts, No. 120, as amended.
62. Petroleum (Submerged Lands) (Royalty) Act, 1967, Austl. Acts, No. 119, as amended.
63. Excise Tariff Act, 1921, Austl. Acts, No. 26, as amended.
64. Petroleum Resource Rent Tax Assessment Act, 1987, Austl. Acts, No. 142.

operator and the state. The Indonesian production sharing system, although not one with which the author has detailed familiarity, may be a more suitable model for adoption in a joint development scheme. This is not meant to express any view on what apparently is the current division between the state and the operator under the Indonesian production sharing arrangement (85/15), but to say that the system of production sharing may be a suitable model. The proportion of production to go to government and the proportion to go to the operator would be a matter for negotiation having regard to a range of factors, including the anticipated costs of production and the expected revenue (i.e. the price of oil).

MARKETING

The marketing arrangements will depend very much on the licensing and revenue arrangements. If a production sharing model is adopted, it would appear to be open to each state to regulate marketing of its share of production. Detailed marketing arrangement will, no doubt, be a matter for commercial negotiation in light of prevailing market conditions.

SYSTEM OF CIVIL AND CRIMINAL LAW

Perhaps, surprisingly, the licensing and revenue aspects of a joint development arrangement are among the easier issues to resolve. Potentially more difficult is the application of a system of civil and criminal law. This issue is particularly complex where, as in the case of Australia and Indonesia, the legal and social systems are so diverse in such matters as labor and employment laws, the ordinary law of tort, and the ordinary criminal laws. These deal with day-to-day questions of wage levels and employment contracts, compensation for injured employees, and law and order in relation to the community of people on a drilling installation.

There is a wide range of possible approaches. One would be to leave these matters to the joint authority to determine in the context of the contractual arrangements with the operator. That would facilitate agreement, at an early stage, on the establishment of a JDZ and a joint authority. The problem with this approach is that when governments present agreements of this kind to their people for public and Parliamentary approval, they must be able to demonstrate that their nations' interest have been adequately secured. It seems doubtful that Ministers would be confident about presenting to the Australian and Indonesian people an agreement that left crucial matters of public interest for later determination on a contractual basis.

Another approach is that in the Thailand/Malaysia agreement, where criminal jurisdiction is divided by a single line. Where, as in the case of the Timor Sea, there is fundamental disagreement on the principles ap-

plicable for boundary delimitation, a single line solution for application of national law and jurisdiction is unlikely to be acceptable to either state because of the possible implications for future delimitation.

Another approach again is that adopted in the Japan/Korea model where, as previously mentioned, the joint development area is divided into blocks which are allocated alternately to license holders of each country and the law of the relevant nationality of the license holder applies. A total change is made at the time of transition from exploration to exploitation. As said before, this approach is not one that appeals, and it seems unlikely that it would appeal to industry.

A variation of this approach would be to determine applicable law according to the nationality of the operator. Since it is unlikely that operators are to be selected on the basis of nationality, the nationality of the operator (which may not be that of one of the two states concerned) seems an inappropriate basis for selection of the applicable system of law.

Another approach again would be that based on the concept of personal jurisdiction. Under this approach, Indonesian nationals working in the area would be governed by Indonesian law and Australian nationals by Australian law. This approach also presents several difficulties. It provides no guidance for the law applicable to nationals of third parties of whom there are likely to be many. Nor is it adequate for dealing with tortious or criminal conduct between a national of one party and a national of the other. Moreover, a situation in which persons working alongside each other are governed by different national laws is clearly unsatisfactory.

Against this background, the author concludes that the application of a single legal system has much to commend it. As a lawyer, the author obviously finds the single system approach attractive because of its simplicity. The question for consideration is whether agreement will be possible on application of a single system. In the case of the Timor Gap, since most movements to and from the JDZ are expected to be through Darwin, Australia is the country with which there will be the greater connection and Australian law is, therefore, the obvious choice for a single system. It would follow that Australian courts should also exercise jurisdiction.

It may be noted in passing that this approach would bring burdens as well as benefits to Australia. For example, Australia would need to bear the cost of law enforcement measures and to provide the resources of its courts and tribunals in relation to matters arising under Australian law (the joint development agreement could, of course, provide for these costs to be shared). Application of Australian civil and criminal law may be an appropriate balance to application of the Indonesian mining code (including the production sharing system).

A possible variation of this approach, in the event that Indonesia saw difficulties with it, would be to combine the single legal system approach with limited scope for the exercise by Indonesia of residual personal jurisdiction, perhaps by agreement, in relation to particular matters, for example, offenses of special gravity committed by Indonesian nationals.

APPLICATION OF PUBLIC REGULATORY LAWS

Provision will also be necessary for the application of public regulatory laws in areas such as customs, immigration, and quarantine. Each state will have an interest in ensuring adequate application of its laws. In particular both states will wish to ensure that the JDZ is not used for violation of their external controls, for example, as a vehicle for drug smuggling or illegal immigration. On the other hand, each state will be concerned to ensure ready access to the JDZ by its own nationals. Unnecessary duplication of controls and excessive administrative costs and burdens need to be avoided. There is scope for cooperation. For example, each state might refrain from controlling movement of nationals of the other state, and control of movement of persons and goods to the JDZ could generally be kept to a minimum.

STATE RESPONSIBILITY

Application of principles of state responsibility, particularly in the area of responsibility and liability for pollution damage to activities of a joint authority, opens up rather undeveloped areas of public law. It seems doubtful that the two states can avoid ultimate application of relevant principles of state responsibility through the creation of a joint authority as a legally separate entity. Probably each state would bear joint and several liability. The matter may be one best left for negotiation if it becomes a practical issue.

DURATION OF A JDZ

The JDZ under contemplation for the Timor Gap is a provisional arrangement pending permanent delimitation. How long this kind of provisional arrangement should apply is essentially a matter for the two governments. It is relevant to observe, however, that its duration needs to be sufficient to afford adequate security to operators. In order to allow adequate time for exploration and subsequent exploitation, a minimum period of around 40 years seems desirable. If agreement on permanent delimitation were not reached, the JDZ would presumably continue indefinitely.

DISPUTE SETTLEMENT

Provision will need to be made for settlement of a range or hierarchy of disputes. Unresolved differences within the joint authority will ultimately need to be referred to the two governments for settlement through normal diplomatic means. Disputes of a commercial nature between the joint authority and licensees, or between licensees and sub-contractors, can best be resolved on a normal commercial basis in accordance with relevant contractual arrangements.

PRE-EXISTING TITLES

A particularly sensitive issue is whether special provision should be made to accommodate the interests of companies who were granted titles in the area of the JDZ by one or other of the states concerned prior to the JDZ arrangement. It is arguable that, since such titles were granted on the basis of a claim to exclusive jurisdiction which is now put to one side, those titles have no force against the opposing claims of the non-granting state. On the other hand, the operators concerned are likely to have expended money in reliance on those titles. Moreover, they will have knowledge and expertise in relation to the area which arguably should not be lost. An arrangement which does not overlook the work undertaken by operators in reliance on previous titles is likely to enhance commercial confidence in the JDZ arrangement and, therefore, to be in the interests of both states.

CONCLUSION

These, then, are some of the key issues that need to be addressed if a JDZ is to be established. Some of the issues are novel and any solution is likely to be complex. Obviously the interests of the two governments need to be accommodated. Equally important, however, is that the arrangements be operationally effective. If the outcome is to be successful, Australian and Indonesian negotiators will need imagination, ingenuity, and good sense.

ADDENDUM

Since the above was prepared, Australia and Indonesia have reached in principle agreement on the establishment of a Zone of Co-operation in the Timor Gap area, for cooperation in petroleum exploration and exploitation (the proposed Zone has no application to other resources or activities in the region). The establishment of the Zone of Co-operation is a provisional arrangement, pending agreement on the delimitation of a permanent sea-bed boundary.

The proposed Zone of Co-operation is depicted in Figure 4. In the

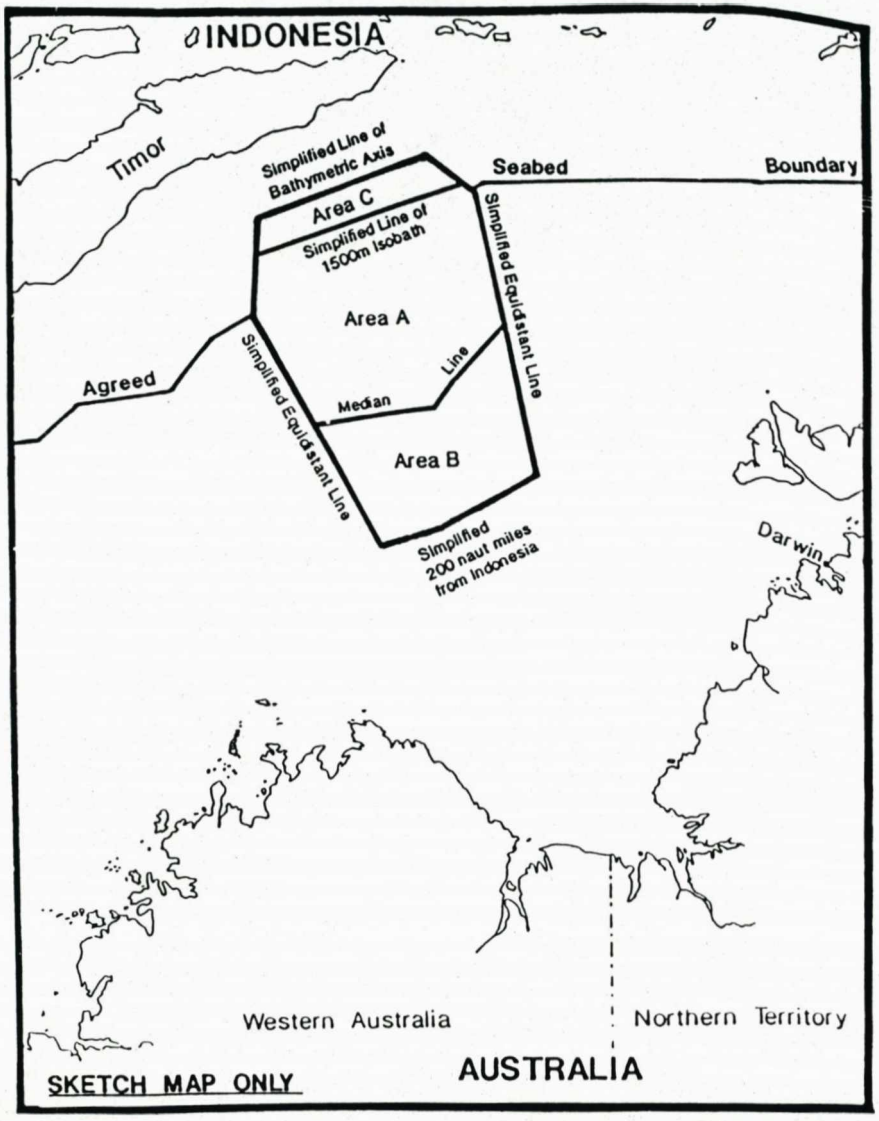

FIGURE 4. Zone of Co-operation.

north, the Zone will be delineated by a simplified bathymetric axis line. The southern boundary is the 200 nautical mile line measured from the Indonesian archipelagic baselines. The eastern and western sides are lines of equidistance. The two sides have agreed that delineation of the Zone will not prejudice the respective positions of the two Governments on a permanent continental shelf delimitation in the area and will not in any way be construed as affecting the respective sovereign rights claimed by each side in the Zone of Co-operation.

The Zone of Co-operation will comprise three component areas, shown as areas A, B, and C in Figure 4. A joint development regime will apply in area A. This will be regulated by a Ministerial Council and Joint Authority. Revenue will be shared on a 50/50 basis. Detailed mining, taxation and legal regimes to apply in area A remain to be established. Area B will be subject to Australian laws covering petroleum exploration and development. Indonesian laws will apply in area C.

Tax revenues in areas B and C are to be shared. In area B, Australia will share with Indonesia 10 percent of gross Resource Rent Tax. In area C, Indonesia will share with Australia 10 percent of company tax revenues. There is also to be a process of notification and consultation between the two Governments, through the Joint Authority, on petroleum exploration and development activities in areas B and C.

The initial term proposed for the Zone of Co-operation is 40 years, with provision for extension for a further 20 years and prior termination in the event that the two Governments agreed to a permanent seabed boundary.

A COMMENT ON THE WILDERNESS DEBATE: A RANCHER'S VIEW*

BEEF: FRIEND OR FOE?

I am a rancher on public lands and an environmentalist. There are groups within the environmental community that would consider those two designations a contradiction. However, I am concerned about the quality of the water that I drink, and the safety of the foods that my family consumes. I am concerned about the quality of the air I breathe, as well as for the habitat that is impacted by my activities. As a rancher, my main source of income depends upon the quality and quantity of grass. It is a renewable resource that must feed my cows this year and into the foreseeable future.

President Theodore Roosevelt, who did much to create our park systems and the U.S. forest system, ranched in the Dakota badlands. It was during his term of office that a split occurred which fragments the environmental community to this day. "Roosevelt's chief forester, Gifford Pinchot, is credited with having first used the term 'conservation' in its present context. Pinchot became the leader of the nation's Forest Service and along with Roosevelt, he advocated a utilitarian, 'wise use' approach to conservation. In this, Pinchot and Roosevelt came into conflict with representatives of another school of thought, called preservationists represented by Muir. . . ."[1] Roosevelt, Pinchot, and Muir are all great names of the environmental movement, but are individuals that represent the battle between the conservationists and preservationists.

On May 23, 1989, at the "Public Lands Forum: Wilderness Issues" seminar co-sponsored by Senator Pete V. Domenici and the Natural Resources Center of the University of New Mexico, Jim Fish, founder of the Public Lands Action Network, stated that he wanted to see all cattle removed from public lands. This, a preservationist position, was countered by a statement from Stewart Udall that "the best cattlemen are the best conservationists." Ranchers have been involved in the conservation movement from the beginning. Since the start of the Soil Conservation Service in the 1930s, ranchers have served on the District Boards to

*I would like to express my thanks to Leonard Padilla of Albuquerque, New Mexico for his wise corrections in wording and grammar.

1. *Conservation of Natural Resources*, in 16 The New Encyclopedia Britannica 666 (1988).